DIGITALLY DRIVING PIXELS FROM
PULSE WIDTH MODULATED WAVEFORMS

Abstract of the Disclosure

Pulse-width modulation may be utilized to drive one or more display elements of a display (e.g. pixels of a liquid crystal display system) comprising a controller that supplies digital information including global and local digital information to a respective signal generator associated with each display element operably coupled to the controller for receiving the digital information. In one embodiment, a spatial light modulator includes a respective local drive circuit associated with each pixel of a pixel array, and a global drive circuit operably coupled to the pixel array for digitally driving the pixel electrodes. Each local drive circuit may include a pixel logic, a digital storage, and pulse-width modulation circuitry. The global drive circuit may include a control logic, and a memory storing global digital information indicative of a common reference (e.g., a count value) and local digital information (e.g., a pixel value) indicative of an optical output from each pixel. Based on the global and local digital information, the pixel logic and control logic may cooperatively determine a transition separating a first pulse interval and a second pulse interval in a modulated signal generated for each pixel.